CSP/E

Third-Party Maintenance (TPM) Update - Europe

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This report is part of INPUT's European Customer Services Program (CSP/E), one of two annual subscription research and planning programs INPUT provides to its European Clients.

CSP/E consists of a series of reports, briefs, conferences, and an inquiry service, all of which concentrate on providing detailed analyses of user needs, vendor services, major trends, and ongoing issues in the European customer services market.

INPUT also offers a similar program that concentrates on the market for information services called the Market Analysis and Planning Service for the Information Services Industry - Western Europe.

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Third-Party Maintenance

TITLE
Update-Europe

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THIRD-PARTY MAINTENANCE (TPM)
UPDATE - EUROPE

APRIL 1984

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THIRD-PARTY MAINTENANCE (TPM)
UPDATE - EUROPE

EXHIBITS

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I   INTRODUCTION

A.   OBJECTIVES

- This study, prepared by INPUT Ltd. for the 1984 European Field Service Program, provides an update of "Third-Party Maintenance" (TPM) in Europe.

- The objective is to:

    - Provide a profile of the larger TPM firms in Europe.

    - Reassess the market for European TPM.

    - Re-evaluate users' attitudes towards TPM.

    - Develop basic information regarding manufacturers, the extent to which they perform TPM, and the degree of support that they provide to others doing (or desiring to do) TPM on their equipment.

B.   SCOPE

- The study was limited to the United Kingdom, Holland, West Germany, and France for the TPM vendor research and to the United Kingdom and France for the TPM user profiles.

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-        There was a heavy concentration of U.K. firms in the vendor sample, owing to the study's requirements.

-        Likewise, the users were predominantly from the U.K. because of the U.K. users' relatively advanced and knowledgeable attitude towards TPM.

C.   METHODOLOGY

●   Sources of information relating to this study included users and vendors who previously responded to INPUT Ltd.'s 1983 Annual and TPM surveys. Thirteen on-site and 80 telephone interviews were conducted using separate question-naires for TPM vendors, TPM users, and OEM manufacturers. Exhibits I-1 and I-2 show the respondent TPM vendors, and OEM manufacturers.

●   The exchange rate used is one pound sterling = 1.45 U.S. dollars.

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EXHIBIT I-1

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LIST OF RESPONDENT VENDORS
(UK Unless Otherwise Noted)

- Advanced Technology Maintenance Ltd. (ATM)

- Cable and Wireless UK Services Ltd.

- Computer Field Maintenance Ltd. (CFM)

- Data Processing Customer Engineering Ltd. (DPCE)

- Decision Data (French)

- Escon Holland

- GCS Engineering Ltd.

- ITS (French)

- Kode Services Ltd.

- Mainstay Computer Cover Ltd.

- Mills Associates Ltd.

- Nexel Ltd.

- Systems Maintenance and Services Ltd. (SMS)

- Thijssen (Holland)

- Vollwood (German)

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EXHIBIT I-2

RESPONDENTS AS PERFORMERS OF, OR CANDIDATES FOR, TPM

• Bell & Howell	• ICL
• CDC	• ITT
• Centronics	• Kienzle
• Commodore	• 3M
• Computervision	• Mannesman Tally
• Data General	• NCR
• Digital Equipment Corp.	• Osborne
• Ericsson	• Plessey
• Floating Point	• Prime
• General Automation	• Sharp
• Hewlett-Packard	• Tandy
• Hitachi	• Texas Instruments
• Honeywell	• Verran
• IBM	• Wordplex

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II EXECUTIVE SUMMARY

- The TPM business in Europe continues to be extremely promising and awaits significant market penetration. Exhibit II-I provides an updated summary of the estimated TPM activity in the U.K., continental Europe, and Scandinavia.

  - The U.K. continues to be the leader in the European TPM market, owing to its initial leadership in independent maintenance.

  - Over 150 TPM firms are estimated to exist, 70% of which trade or are headquartered in the U.K.

  - While the 1984 estimate for TPM business currently under contract is $123 million, the unrealised potential ranges between $462 million and $1.159 billion. This is based on user responses to INPUT's 1983 The Third-Party Maintenance Market in Europe study with 1984 adjustments.

- Since The Third-Party Maintenance Market in Europe was published in June 1983, a number of large, U.S.-based companies have expressed a keen interest in European TPM business opportunities.

  - In the autumn, Bell and Howell announced a TPM organisation to pursue microcomputer service.

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EXHIBIT II-1

UPDATED SUMMARY: TPM MARKET IN EUROPE - 1984

MARKET	TOTAL ESTIMATED MAINTENANCE EXPENDITURE ($ Millions)	ESTIMATED CURRENT EXPENDITURE FOR TPM ($ Millions)	ESTIMATED NUMBER OF TPM FIRMS	ESTIMATED TOTAL TPM MARKET INCLUDING CURRENT EXPENDITURE ($ Millions)	
				Pessimistic	Optimistic
West Germany	$1,824	$ 17	11	$ 85	$ 274
France	1,480	11	8	90	222
United Kingdom	1,130	67	107	297	339
Italy	795	6	10	14	159
Scandanavia	458	8	5	35	92
Netherlands	269	7	5	32	55
Spain	269	1	2	4	40
Switzerland	242	1	2	5	46
Belgium	148	3	3	17	41
Austria	68	1	1	3	8
Portugal	47	1	1	3	6
TOTAL	$6,730	$123	155	$585	$1,282

SOURCE: INPUT Estimate

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- Other American companies known to be considering TPM in Europe include:

    . Control Data Corporation.

    . General Electric (Calma Division).

    . International Telephone and Telegraph (ITT).

● IBM equipment and mainframes represent an especially good TPM market because of:

    - The large number of IBM machines installed in Europe.

    - IBM's relatively open policy in providing spares, backup support, and maintenance documentation.

● Other major mainframe manufacturers that have substantial equipment bases for potential TPM include:

    - Honeywell.

    - Sperry.

    - DEC.

    - Control Data.

    - ICL.

    - NCR.

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- Some of these companies have been known to discourage TPM competition through pricing and policy strategies. They also have been known to intimidate their users regarding TPM. Greater TPM will provide significant demand for a mechanism for opening freer competition and these obstacles should become less and less of a deterrent.

- Users continue to have a high interest in TPM and are so motivated, primarily because they believe TPM is more economical than manufacturers' service. Many users who would consider TPM don't know about the availability of TPM companies and resources; this emphasises the need for TPM marketing. User attitudes towards TPM are provided in Chapter IV.

- Most manufacturers are generally willing to support the efforts of independent TPM firms, as shown in Exhibit II-2.

- Complete profiles for each company are included in Chapter III. Questionnaires are included in the Appendices.

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EXHIBIT II-2

MANUFACTURERS' WILLINGNESS TO SUPPORT
INDEPENDENT TPM COMPANIES

PERCENT	DEGREE OF SUPPORT
43%	Willing to Support TPM
36	Reluctantly Willing to Support TPM
14	Unwilling to Support TPM
7	Don't Know

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III   SELECTED TPM VENDOR PROFILES

A.   CABLE AND WIRELESS U.K. SERVICES LTD.

- 83 Blackfriars Road, London SE1 1HQ.
  Telephone: 01-633-9577 Telex: 915453.
  Established 1968. Parent company: Cable and Wireless Plc.

1.   SUMMARY

- Minicomputers, larger micros, and a full range of peripherals are serviced by Cable and Wireless. The IBM personal computer is the smallest of the micros dealt with.

- Established for nine years, the company services England, Scotland, and Wales, presently totalling 1,000 user sites. Cable and Wireless is considering the possibility of moving into Europe as a service organisation.

- The employ 100 field engineers who have received both in-house and external training. A substantial parts inventory is available for the field engineers.

- Costs are fixed for a specific machine type. Service contracts are negotiable and Cable and Wireless says this flexibility is one of the most attractive facets of the service offered.

INPUT

2.   FINANCIAL

- Cable and Wireless Service's 1983 TPM turnover was $5.8 million, up 11% from 1982, reflecting the sluggish economy as well as Cable and Wireless' reorganisation when it moved to the private sector from government control.

- Conservative estimates for revenue turnover in future years are as follows:

    -    1984: $ 6.5 million.

    -    1985: $ 9.4 million.

    -    1986: $ 9.4 million.

- Gross profit before tax is estimated at 22%. Assets are estimated at $1.1 million.

3.   SPARES HOLDING POLICY

- There is balanced spares holding to provide adequate service.

4.   TYPES OF CONTRACT

- Ad hoc for breakdowns.

- Routine maintenance; breakdowns charged for time and parts.

- Short-term standby agreements.

- Other types of contracts: any type of contract can be quoted; flexibility to meet customers' requirements is provided.

INPUT

5.   LEVELS OF CALL-OUT RESPONSE AVAILABLE

- Ad hoc, within hours: 2, 4, 8, 24, 48.

- Contract, within hours: 2, 4, 8, 24, 48.

- Those available: 9 a.m.-5 p.m., shift and a half, 24 hours; 7 days and public holidays.

- Engineer continues working if on-site repairs not completed at end of shift.

- Contracts available by which engineers are resident on-site.

6.   SERVICE AREA AND CENTRES

- All U.K.

- London, East Kilbride, Leeds, Sutton, Coldfield, Bristol, Rickmansworth, Manchester, Redcar, and Neath.

7.   OTHER SERVICES

- Supplies and installs systems; system-building and commissioning.

8.   ORGANISATION

- There is strong management in branch offices. Headquarters management is lean. Management is very competent, well known, and respected by U.S. and European field service managers.

- Cable and Wireless Service has an excellent reputation and is technically skilled to meet vigorous TPM requirements.

INPUT

9. MARKETING

● Cable and Wireless Service is considered to be an aggressive marketer of TPM and has several large national accounts, including British Steel and Esso. They view the TPM market as "evolutionary" rather than "revolutionary" and emphasise the need for customers to become accustomed to TPM.

B. CFM

● Excell House, Trust Industrial Estate, Hitchin, Herts SG4 OUZ.
  Telephone: Hitchin (0462) 51511 Telex: 826649.
  Established 1970. Ninety percent turnover from IM Parent Company: International Aeradio Ltd.

1. SUMMARY

● CFM services more than 1,500 user sites throughout the U.K. and has engineers located from Aberdeen to St. Austel. The 280 field engineers are trained at a full-time training college in Crewe. Each engineer has one month out of each year devoted to training. The engineers work out of 27 field stations and when necessary from home.

● CFM is owned by IAL, which in turn is owned by STC. CFM carries a parts inventory worth approximately three million pounds. All the big-name machines are serviced; CFM will also tackle other equipment.

● Computer Field Maintenance has a charging policy that is reviewed annually. This scheme tailors the charge to the customer's specific needs.

INPUT

2. FINANCIAL

- CFM's 1983 revenue turnover is estimated to be $11.9 million. Growth is predicted by CFM management to be 20% per year. Pretax gross profit is estimated at 8.5% of turnover and the company claims to have always made a profit from TPM. CFM's assets are approximately $3.8 million.

3. SPARES HOLDING POLICY

- Area distribution backed by head office stores; total value of 3.5 million pounds.

4. TYPES OF CONTRACT

- Contracts for routine maintenance and breakdowns; comprehensive coverage; various response times to suit user needs at appropriate cost.

- Ad hoc for breakdowns.

- Routine maintenance; breakdowns charged time and parts.

- Short-term standby agreements.

- Other types of contract: any, by special arrangement.

5. LEVELS OF CALL-OUT RESPONSE AVAILABLE

- Ad hoc, within hours: not available.

- Contract, within hours: 2, 4, 8, 16, 24, 48.

- Those available: 24 hours or 7 days and public holidays.

INPUT

- Engineer continues working if on-site repairs not completed at end of shift.

- Contracts available whereby engineers are resident on-site.

6. SERVICE AREA AND CENTRES

- All U.K.

- Twenty-two nationwide.

7. OTHER SERVICES

- Installs systems.

- Maintains management services for large users.

- Second-user equipment inspection and reports.

- Damage assessment for insurance claims.

- Decommissioning, recommissioning.

- Hardware audits only (IBM).

8. ORGANISATION

- CFM management is extremely knowledgeable about the TPM business and interfaces with Kalbro Corporation, a TPM firm in New Jersey that is also owned by IAL.

- CFM is the largest known TPM vendor in the U.K. or continental Europe. It has supplied TPM since 1969. CFM concentrates on doing one thing well and carefully selects the TPM business, matching skills with customers' needs.

INPUT

9. MARKETING

- CFM has the best range of equipment of all candidates because it includes mainframes as well as peripherals. The fact that CFM is already capable of maintaining IBM, CDC, DEC, DG, and BCL mainframes could mean it also has a good base for other major mainframes.

- Marketing in terms of promotions and reputation is excellent. CFM has a full-time sales force selling TPM.

C. DPCE

- 6 Broad Street, Wokingham, Berks RG11 1AB.
  Telephone: Wokingham (0734) 790703 Telex: 849409.
  Established 1971. One hundred percent turnover from IM. Parent Company: DPCE Holdings Plc.

I. SUMMARY

- One hundred and fifty different machines are maintained in 300 user sites by DPCE. British Airways and the National Girobank are on the list of DPCE's 55 main customers - 11 of which have networks totalling more than 500 terminals.

- DPCE serves the whole of the United Kingdom and the Netherlands and has been established for 13 years. About 140 field engineers work for the firm and are trained by DPCE and by individual manufacturers.

- The firm charges customers on an evaluation scheme. This is referred to as "resource base costing" at DPCE.

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INPUT

- The firm claims the advantage of having charges that are up to 30% lower than those of the manufacturers - and an expertise gained in large installations.

2.   FINANCIAL

- DPCE's pro forma estimates for 1983 turnover and profit before tax are $7.9 million and $2.1 million (26%) respectively.   Previous years' turnover and profit before tax (shown in parentheses) are as follows:

    -    1978: $ 1.3 million (24.3%)

    -    1979: $ 1.6 million (14.5%)

    -    1980: $ 2.3 million (21.7%)

    -    1981: $ 3.7 million (20.6%)

    -    1982: $ 5.3 million (17.5%)

- DPCE went public in July, 1983, with nearly four million shares of ordinary stock at $2.47 per share. This was very successful.

3.   SPARES HOLDING POLICY

- Total spares holding at customer's installation where possible. Full inventory for all machines available countrywide.

4.   TYPES OF CONTRACT

- Contracts for routine maintenance and breakdowns.

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INPUT

- Comprehensive coverage.

- Various response times to suit user needs at an appropriate cost.

5.   LEVELS OF CALL-OUT RESPONSE AVAILABLE

- Ad hoc, within hours: 2, 4, 8, 24.

- Contract, within hours: 2, 4, 8, 24.

- Those available: 9 a.m.-5:30 p.m., 24 hours; 7 days and public holidays.

- Engineer continues working if on-site repairs not completed at end of shift.

- Contracts available whereby engineers are resident on-site.

6.   SERVICE AREA AND CENTRES

- All U.K.

- Glasgow, Leeds, Liverpool, Manchester, Coventry, and Exeter.

7.   OTHER SERVICES

- System installation.

- Hardware audits.

- Consultations.

- Site surveys.

- Installation planning.

INPUT

8.   ORGANISATION

- DPCE's organisation includes an impressive staff of senior management, well balanced in technical, financial, and business skills. C. G. Clive, the Chairman, 46 years old, is a former IBM employee and a graduate of MIT and Harvard Business School.

9.   MARKETING

- "In the view of the directors, DPCE's present market has considerable potential for development, and new markets are available, primarily in the U.K., Europe, and the U.S. Future growth will come from a wider acceptance of the independent maintenance concept among potential customers and from an expansion of DPCE's capabilities in terms of manpower and expertise" - Prospectus, DPCE Holdings Plc., July 6, 1983.

- DPCE has a total of 47 contracts in 1983 and tends to put all its eggs in a few baskets. This jeopardises its position in the opinion of a few observers, who say that "if DPCE ever lost the British Airways contract it would be in trouble."

D.   ESCON

- Signhaven 1026-3011 WV Rotterdam - Holland.
  Telephone: 010-1-10-33-3211 Telex: 26321.

1.   SUMMARY

- Escon is in business largely because Data General did not have a full-service capability in Holland prior to 1976 when Escon entered TPM.

INPUT

- Escon services a wide range of DG and other equipment, primarily in Holland but with lesser operations in Germany and Belgium.

- Escon reports that the TPM business in Holland is quite good because users are accepting TPM more and more. Escon claims they are doing well because they only sell service, whereas competitors such as Datelcare sell hardware as well as service.

2. FINANCIAL

- Revenue turnover for 1982 was three million guilders or about $1.5 million. Escon declined to provide later figures but it is estimated that their business is growing about 25% per year.

3. OTHER SERVICES

- Installation/deinstallation.

- Relocation.

- Conversions and upgrades.

- Supplies and accessories.

4. AGREEMENTS WITH SUPPLIERS

- In several cases Escon is the distributor's service agent, especially in micro-computers.

5. CONTRACTS

- Very few extra-shift contracts - mostly prime shift.

INPUT

- Provide 48-hour response normally and a 4-hour response at 15% premium.

6. SERVICE AND CENTRES

- Rotterdam and Amsterdam are the centers for Holland, Belgium, and Germany.

7. ORGANISATION

- Four departments: instrumentation, minis, micros, and peripherals.

- Service manager, four supervisors, 20 engineers, general director, technical director, and financial director.

8. MARKETING

- Escon's marketing efforts are not particularly aggressive or impressive.

E. GCS

- 13 Mount Road, Hanworth, Feltham, Middx TW13 6JG.
  Telephone: 01-898-5251 Telex: 8955177
  Established 1969. One hundred percent turnover from Parent Company GCS Ltd.

1. SUMMARY

- Two-, four-, and eight-hour on-site response services are available from GCS Engineering. The firm specialises in minis, micros, and peripherals - and is the approved maintenance company for Apple, Osborne, and Corvus.

INPUT

- By the end of 1984 the company expects to have 40 walk-in repair shops operating in mainland Britain. User sites are several thousand in number - service is provided by 130 field engineers. GCS says its engineers spend 15% of their time training at the company's training centre in Manchester.

- Set up in 1969, the firm claims to offer a completely personal service - tailored to the individual customer's needs.

2. FINANCIAL

- Revenue turnover for 1983 is estimated to be $5.8 million, with a gross profit before tax of 14%.

- Subsequent revenue projections (with accompanying gross profit before tax in parentheses) are as follows:

  - 1984: $ 8 million (15%)

  - 1985: $ 9.7 million (16%)

  - 1986: $ 12.0 million (17%)

- GCS feels that 18% is the maximum gross profit before tax, owing to the following:

  - Critical mass.

  - Nature of TPM market.

  - Competition

INPUT

3. AGREEMENTS WITH SUPPLIERS TO MAINTAIN THEIR EQUIPMENT

- Apple (U.K.) - complete range of Apple products.

- Computer Automation Omnix, Alpha 16.

- Elbit Data Systems - complete range of Elbit products.

- Gemini Microcomputers - Gemini, Qantum.

- Internet SDS.

- Keen Computers - Corvus Concept, Corvus disk.

- NEC - PC8000.

- Osborne Computer Corporation (U.K.) - Osborne.

- TDI - Sage computer.

4. SPARES HOLDING POLICY

- Eighty percent held at service centres, 20% at central stores.

5. TYPES OF CONTRACT

- Ad hoc for breakdowns.

- Routine maintenance; breakdowns charged for time and parts.

- Fixed price plus cost of parts.

- As above; repair within guaranteed time.

INPUT

- Short-term standby agreements.

- Other types of contract: tailored contracts to clients' requirements.

6. LEVELS OF CALL-OUT RESPONSE AVAILABLE

- Ad hoc, within hours: 24.

- Contract, within hours: 2, 4, 8, 24, 48.

- Those available: prime shift, shift and a half, Monday-Friday, Saturday and public holidays by arrangement.

7. SERVICE AREA AND CENTRES

- Mainland U.K.

- London, Basildon, Bristol, Birmingham, Northampton, Manchester, Sheffield, and Airdrie.

8. OTHER SERVICES

- Installs systems.

- Advice and sales of import/export.

- Environment.

- Equipment relocation.

- Configuring, delivery and installations.

INPUT

- Training of maintenance engineers.

9. ORGANISATION

- Five people hold 51% of the stock in GCS Engineering Ltd., a subsidiary of GCS Ltd. An unnamed investor holds the remaining stock. GCS is a known expert in TPM and has been the subject of several articles and was even interviewed on London radio recently. GCS is probably the best TPM-business-orientated firm in the industry and has developed a very good marketing program.

10. MARKETING

- GCS markets TPM better than any other competitor in Europe and perhaps in the U.S. as well. Their successful promotional themes stress independence (rather than third-party status) and emphasise flexibility to meet the customers' needs.

- GCS's exclusive maintenance deal for Apple in the U.K. is working out very well and other manufacturers are expected to choose GCS as their service agent in the near future.

- One apparent weakness in GCS is its failure to pursue mainframe business.

F. KODE

- Station Road, Calne, Wilts SN11 0JR.
  Telephone: Caine (0249) 813771 Telex: 449335.
  Established 1974. Ninety percent turnover from IM Parent Company: Kode International Plc.

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INPUT

1. SUMMARY

- Services a wide range of equipment, including paper punches, VDUs, terminals, micros, and minis. The company serves the whole of the United Kingdom with 3,000 user sites being covered by a front line of 100 in-house-trained field engineers.

- Formed as an independent company in 1974, Kode charges on an evaluation scheme that accounts for the equipment to be serviced, the likely costs of labour and parts, and past experience.

- Kode also has a Winchester disk repair service with its own clean room that services the whole of Europe. The disk service has received enquiries, and has on occasion serviced equipment from Finland, South Africa, and New Zealand.

2. FINANCIAL

- Kode Services estimated 1983 revenue turnover is approximately $5 million, at a gross profit before tax of 20%. Earlier figures include (gross profit before tax in parentheses):

  - 1982: $ 6.6 million (19.8%)

  - 1981: $ 3.7 million (16.8%)

- Net assets were $1.5 million and $1.2 million for 1982 and 1981 respectively.

3. AGREEMENTS WITH SUPPLIERS TO MAINTAIN THEIR EQUIPMENT

- Anadex Printers - DP 8000, DP 9500/1, DP 9600, WP 6000.

- Data Transfer for Delpha Systems 1020.

INPUT

- GNT Automatic (U.K.) - Paper tape punches 3601, 3602, 4601, 4602, 4603.

- Lear Siegler Terminals ADM 3A, AD, 31.

- OKI Microline Printers 80, 82A.

- Pertec XL 20 and 40 systems.

- Qume printers 3, 5.

- Research machines - all: Teletype 40, 43, 33. Transtel - all.

- Vector Graphic Microprocessor Systems - all.

4. SPARES HOLDING POLICY

- Comprehensive stocks of spares held at all eight KODE depots throughout the U.K. In addition field engineers hold a very good range of spares that are replaced as used.

5. TYPES OF CONTRACT

- Ad hoc for breakdowns.

- Other types of contract: return to depot maintenance/repair contracts.

6. LEVELS OF CALL-OUT RESPONSE AVAILABLE

- Ad hoc, within hour: 48.

- Contract, within hours: 2, 4, 8, 24, 48.

INPUT

- Those available: prime shift; Monday-Friday.

- Engineer continues working whenever possible if on-site repairs not completed at end of shift.

- Contracts available whereby engineers are resident on-site.

7. SERVICE AREA AND CENTRES

- All U.K., Europe.

- Chessington, Maidstone, Birmingham, Bristol, Rochdale, Falkirk, Belfast, and Dublin.

8. OTHER SERVICES

- Kode Services Ltd. are the U.K., Scandinavian, and European disk repair agency for Kennedy Inc., IMI, CMI, and Seagate Technology. Winchester disk drive electronic and HDA repair is available at the Caine depot in a Class 100 clean room that conforms to Federated Standards 209B.

- Also sells spares and media.

9. ORGANISATION

- John May, Managing Director, resigned in early 1983. Murray Dolan, formerly of CFM, was recruited to fill the vacancy. Because of the lengthy time involved in the changeover, the company may have suffered slightly.

10. MARKETING

- Kode has a respectable customer base, including exclusive maintenance agreements for printer and terminal manufacturers.

INPUT

G.   MAINSTAY

- Bamford Grange, Adswood Road, Stockport, Cheshire.
  Telephone: 061-477 5825 Telex: 668365.
  Established 1981. One hundred percent turnover from IM.

1.   SUMMARY

- MAINSTAY was the first TPM company to provide more than a breakdown-only service and the first to offer insurance-based IBM computer maintenance in the U.K.

- "The total trust and complete confidence enjoyed by all our clients is well-founded. Our personnel are professionals with many years' experience, each one carefully selected to complement his colleagues."

- MAINSTAY Computer Cover ensures that IBM or MAINSTAY's own engineers will carry out all engineering work on customers' machines.

2.   FINANCIAL

- Mainstay's 1983 revenue turnover was $1.1 million, with a pretax profit of 2% on turnover. This reflects MAINSTAY's newness to the TPM market. Their own projections for the future are as follows (gross profit before tax shown in parenthesis):

  -    1984: $ 2.2 million (13.1%)

  -    1985: $ 3.8 million (19.2%)

  -    1988: $ 6.1 million (21.4%)

- Assets are currently estimated at $2.8 million.

INPUT

3. AGREEMENTS WITH SUPPLIERS TO MAINTAIN THEIR EQUIPMENT

- IMN PC; Tecmar - PC-Mate ranges of IBM add-ons.

4. SPARES HOLDING POLICY

- All-embracing - machines, components, and boards.

5. TYPES OF CONTRACT

- Fixed price plus cost of parts.

6. LEVELS OF CALL-OUT RESPONSE AVAILABLE

- Ad hoc, within hours: not available.

- Contract, within hours: 24.

- These available: 24 hours; Monday-Friday.

- Engineer continues working if on-site repairs not completed at end of shift.

7. SERVICE AREA AND CENTRES

- All U.K.

- Stockport.

8. OTHER SERVICES

- Supplies and installs systems and will upgrade them.

INPUT

9.   ORGANISATION

- Organised in 1980, Mainstay has organised well and includes several former IBM employees who are shrewd businessmen and technically capable.

- Geoff Henderson, Managing Director, is a very articulate and clever TPM entrepreneur who will surely be successful.

10.   MARKETING

- Mainstay is one of the most aggressive TPM marketers within their speciality, which currently is IBM GSD computer equipment.

H.   MILLS

- Wonastow Road, Monmouth NP5 4YE.
  Telephone: Monmouth (0600) 4611 Telex: 498306.
  Established 1970. Fifty percent turnover from IM.

1.   SUMMARY

- Specialises in business systems and peripherals, including Zilog computers and NEC printers. Mills has been independent for the past 12 years - but it maintained equipment for eight years previously as a subsidiary of a parent company.

- England and Wales are covered, as is Scotland as far north as Dundee. There are 1,500 user sites presently on the books. The 60 field engineers are trained by Mills at its training school and receive external training when necessary.

INPUT

- Two types of service are available. Field maintenance operates on a contract scheme, for 24- or 72-hour fast response. Workshop repair offers a fixed price based on parts used and equipment collected and delivered.

2. FINANCIAL

- Mills' estimated revenue turnover for 1983 is slightly under $5 million. Prior years' performance (including profit before tax figures in parentheses) are as follows:

    - 1982: $ 5.1 million (2%)

    - 1981: $ 4.7 million (2%)

3. AGREEMENTS WITH SUPPLIERS TO MAINTAIN THEIR EQUIPMENT

- Commodore - all models.

- NEC Spinwriter printers.

- Zenith - all models.

- Zilog MCZ1, ZDS, S8000 ranges.

- SGS UX16, UX8 range.

4. SPARES HOLDING POLICY

- Computerised stock system.

- Spares held at locations throughout U.K.

INPUT

5.   TYPES OF CONTRACT

- Ad hoc, for breakdowns.

- Routine maintenance; breakdowns charged for time and parts.

- Fixed price plus cost of parts.

- As above; repair within guaranteed time.

- Short-term standby agreements.

6.   LEVELS OF CALL-OUT RESPONSE AVAILABLE

- Ad hoc, within hours: not available.

- Contract, within hours: 4, 24, 28.

- Those available: prime shift, shift and a half, seven days.

- Engineer continues working or returns next working day if on-site repairs not completed at end of shift.

7.   SERVICE AREA AND CENTRES

- All except N. Scotland and N. Ireland.

- Monmouth, Birmingham, Ilford, Chertsey, Cardiff, Swansea, Nottingham, Manchester, Newcastle, and Edinburgh.

INPUT

8.   OTHER SERVICES

- Installs systems.

- Enhancements, upgrades.

- Refurbishment of mainframe systems.

- Independent inspection of used equipment.

- Site and environmental planning.

9.   MARKETING

- Mills' marketing efforts are somewhat obscure. However, Engineering Director John Gould is the Chairman of the CSA TPM interest group, which is doing a good job of promoting TPM.

I.   NEXEL

- 3 Jefferson Way, Thame, Oxfordshire OX 93SU
  Telephone: 0844-213151

1.   SUMMARY

- Office and numeric control systems are maintained as after-sales services. Third-party servicing is available on a contract scheme. Word processors, personal computers, and printers are specialities.

- Eight field stations around the country provide a nationwide service to 550 sites. Eighty-five people are employed as the service support team.

INPUT

- The contract scheme for third-party servicing involves a contract signed with the manufacturer. Nexel subsequently maintains and services equipment when necessary. This scheme is currently available from eight manufacturers - including Logica and Fortune.

2. FINANCIAL

- Nexel's financial figures are not disclosed because it is a privatively held company, but it is estimated that its annual turnover is less than $1 million.

3. ORGANISATION

- Nexel was financially reorganised in April 1982, with Trevor Lafferty as Managing Director.

- Reflecting the need to expand into new markets, Nexel has created the position of "New Business Director" (Gary Driver).

4. MARKETING

- Marketing is limited. Products maintained include:

    - Nexos.

    - Ricoli Printers.

    - Logisa VTS.

    - Fortune.

    - Quorun.

INPUT

-　　　Unicon.

-　　　ICL DRS8801.

J.　　SMS LTD.

- P.O. Box 13, Unitair Centre, Great Southwest Road, Feltham, Middlesex
  TW148NT
  Telephone: 751-4451

1.　　FINANCIAL

- SMS's revenue turnover is approximately $3 million for 1983, but officials declined to be specific, despite the fact that SMS is a public company. Previous performance is as follows:

  -　　　1981: $ 1.6 million (loss before tax of $36,000).

  -　　　1980: $ 1.5 million (loss before tax of $280,000).

2.　　ORGANISATION

- SMS is very keen on expanding into Europe and has previously and unsuccessfully attempted European TPM. The failure was due to SMS not using local nationals, but rather attempting to impose British management and technicians on each foreign market.

3.　　MARKETING

- SMS currently has a good marketing philosophy and is reasonably aggressive about rebuilding their TPM bases in Germany, France, Benelux, and Switzerland. The stigma of the previous failure may hurt them.

INPUT

K. THIJSSEN FIELD SERVICE

- 7370 AA Loenen (Gld)
  Postbus 31
  Hoofdweg 60 Netherlands
  Telephone: 5765-155

1. SUMMARY

- Thijssen is a smaller company, with about one million dollars in annual turn-over. Gross profit is about 15% and there are about 130 accounts, most of whom are DEC users. The company is well managed.

L. VOLLWOOD

- Vollwood Computer Service
  Frankfurter Alle 103
  6236 Eschborn
  Telephone: 6196 70120

1. SUMMARY

- Vollwood is a relatively diversified organisation with hardware sales and leasing teleprint and service divisions in Germany, England, Switzerland, Austria, the Netherlands, and the U.S.

- Service divisions exist in Germany, the U.S., and the Netherlands.

- Vollwood maintains a variety of printers, small systems, and telex equipment and has been in TPM since 1980.

- 38 -

INPUT

2.   FINANCIAL

- Vollwood currently does about $3.5 million dollars in TPM, which includes over one million in spare parts sales.

- They claim a 15% growth rate and are getting into microcomputer service.

3.   AGREEMENTS WITH SUPPLIERS

- Like Escon in Holland, Vollwood is selling micro service to distributors.

4.   CONTRACTS

- Vollwood offers a less-than-one-hour board swap and a guaranteed 24-hour response time. There is very little need for extra shift coverage. Also available is two- and four-hour response (at a premium).

5.   SERVICE CENTRES

- Berlin, Gottingen, Hamburg, Siegen, Mannheim, Munchen, Nurnburg, and Freiburg.

- U.S. office; P.O. Box 222, 325 Boston Post Road, Wayland MA 01778. Telephone: 617-358-5216 Telex: 948345.

6.   OTHER SERVICES

- Spare part sales.

- Installation/deinstallation.

- P.M.

INPUT

7.   ORGANISATION

- This German company went bankrupt in 1981 because of internal problems but has rebounded and is making money now. It has fifty-five service engineers, two field specialists, and three managers.

8.   MARKETING

- Vollwood is good at marketing their TPM and has an impressive brochure and price list (all in German). They claim that DEC customers are getting fed up with the policy that DEC won't maintain other manufacturers' equipment and this has boosted their marketing advantage. They claim to have no national competition and only small regional competition. They believe that the German TPM market will rapidly grow, just as U.S. and U.K. TPM has grown. They understand that DEC and CDC are exploring TPM in Germany. Vollwood is getting a much larger volume of enquiries for TPM than they had in the past.

INPUT

IV   USERS AND PROSPECTS - TPM

A.   DEMOGRAPHICS

- Exhibits IV-1 to IV-9 provide demographics about TPM users and prospects. Typically users are:

    - Either in manufacturing or services.

    - Employing between 500 and 1,000 workers.

    - Using annual maintenance budgets of between $16,000 and $35,000 per year.

- A few users had been using TPM for up to 10 years, with the average period of TPM use being 3.2 years.

- Since most of the current users had been using TPM for a relatively long time (average of 3.2 years), the credibility and significance of the results of the survey appear to be quite high.

- There was a wide range of TPM suppliers. Two users were using more than one TPM supplier.

- The choice of TPM supplier appeared to depend on:

INPUT

EXHIBIT IV-1

TYPE OF COMPANY
AS TPM USER OR PROSPECT

TYPE OF INDUSTRY	PERCENT OF SAMPLE
Manufacturing (Including Distributors, Food Processors, Breweries)	41%
Services (Retail, Newspapers)(Restaurants & Hotels, Publishing, Television, etc.)	39
Financial (Insurance, Banks)	11
Education	9
TOTAL	100%

INPUT
FEBP

EXHIBIT IV-2

- 43 -

SIZE OF COMPANY
AS TPM USER OR PROSPECT

NUMBER OF EMPLOYEES	NUMBER OF RESPONDENT COMPANIES
1,000 or more	16%
500 - 999	34
300 - 499	18
100 - 299	25
Less than 100	7
TOTAL	100%

44 Respondents

INPUT
FEBP

EXHIBIT IV-3

INPUT
FEBP

SIZE OF 1984 MAINTENANCE BUDGET:
TPM USERS AND PROSPECTS

SIZE OF BUDGET ($ Thousands Annual)	NUMBER OF RESPONDENTS
Over 145	8%
75 - 145	16
36 - 74	22
16 - 35	32
1.5 - 15	22
TOTAL	100%

37 Respondents

INPUT
FEBP

EXHIBIT IV-4

- 45 -

LENGTH OF TPM USE

"How Long Have You Been Using TPM?"

13 Respondents

INPUT
FEBP

EXHIBIT IV-5

PROVIDERS OF TPM
("Who Provides Your TPM?")

- Kode

- SMS

- Aquarius

- CFM (2 Mentions)

- Hamilton

- GCS

- Pericom (2 Mentions)

- CIL

- Mills

- Middletron

- TSS

- DDT

13 Respondents

INPUT
FEBP

EXHIBIT IV-6

QUALITY OF TPM SERVICE

"Is Your TPM Service Good, Adequate or Poor?"

13 Respondents

INPUT
FEBP

EXHIBIT IV-7

- 48 -
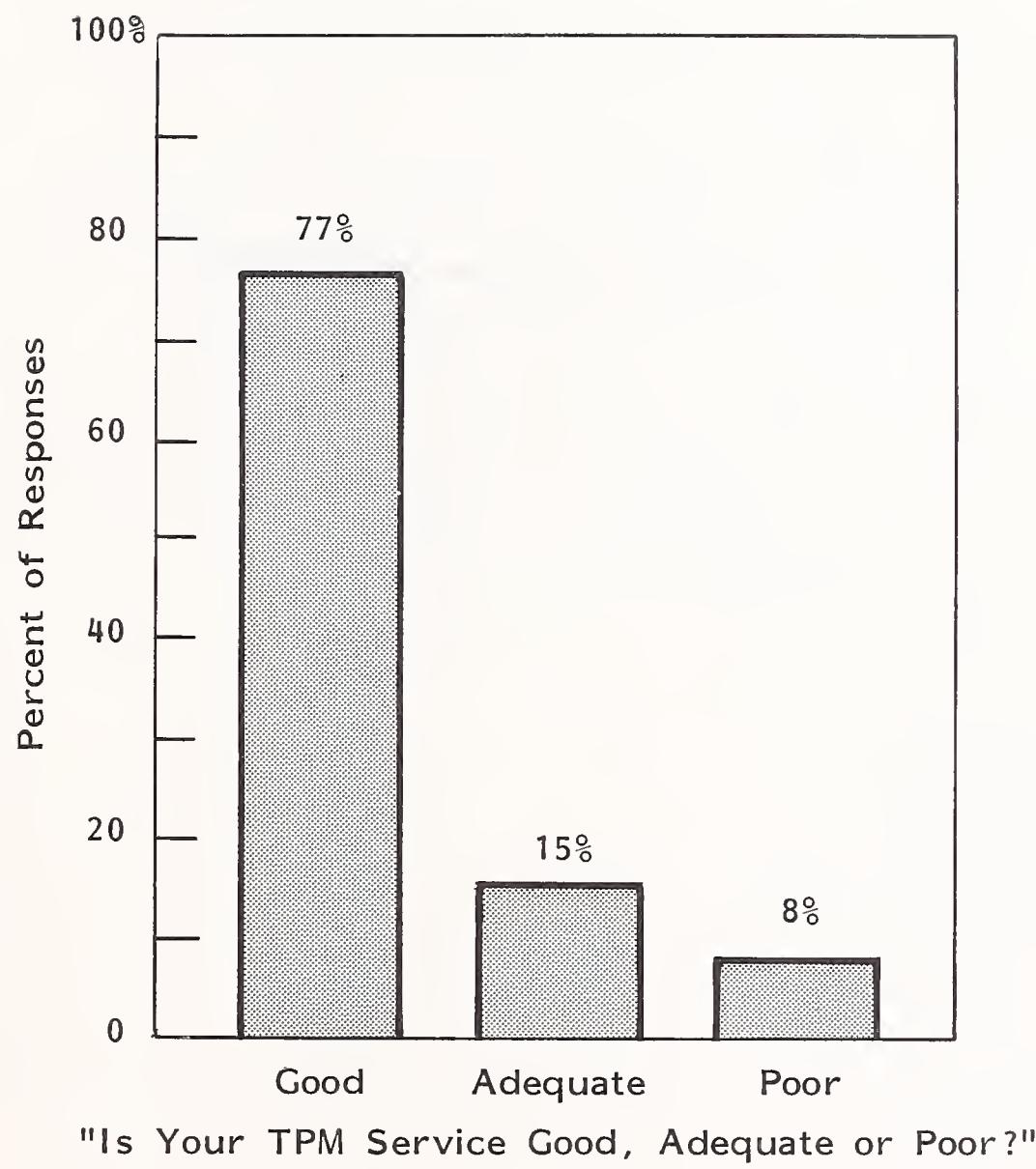
"DO YOU INTEND TO CONTINUE USING TPM?"

```
Yes . . . . . . . . . . . . 92%

No . . . . . . . . . . . . 8%
```

13 Respondents

EXHIBIT IV-8

- 49 -

"WOULD YOU CONSIDER USING ANOTHER TPM
VENDOR IN ADDITION TO OR AS A REPLACEMENT
FOR YOUR CURRENT TPM VENDOR?"

Replacement 62%

No 31%

Addition 7%

13 Respondents

INPUT
FEBP

EXHIBIT IV-9

"WHAT ARE YOUR PRINCIPAL REASONS
FOR USING TPM?"

```
Cost . . . . . . . . . . . . . . . . .  43%

Manufacturer Doesn't Offer . . . . . .  29%
Service

TPM Service is Better Than  . . . . .  28%
Manufacturer's
```

12 Respondents

INPUT
FEBP

- Which TPM supplier was recommended by the manufacturer - for example DEC tends to operate closely with TPM companies.

- The availability of maintenance from the manufacturer (e.g., Vector and Elbit did not provide maintenance).

- User acceptance of the cost of maintenance charged by the manufacturer.

- The availability of TPM services in the geographical region of the user.

- In general, users were satisfied with their TPM services and described them as good and adequate. These responses were made by 92% of the sample.

- Only 8% of the users were dissatisfied with the TPM service. They mentioned poor availability of maintenance services and complained about the incompetence of the TPM technicians.

- Forty percent of the users had experienced no problems with TPM.

- Poor response time and incompetent technicians were each mentioned by 15% of the TPM users.

- Thirty percent of TPM users referred to a range of problems, which included:

  - The high cost of installing equipment.

  - High maintenance charges.

  - Poor service availability.

INPUT

-   Problems with determining which company was responsible for maintenance when TPM suppliers and manufacturers provided maintenance services for the same site.

•   A total of 60% of the users had experienced problems with TPM. However, since 92% of those users described their TPM services as good or adequate, it appeared that users were sympathetic to many of the maintenance problems.

•   Users were keen to continue using TPM despite the problems that some had experienced.

•   Ninety-two percent intended to continue using TPM and only 8% did not intent to continue using TPM.

•   The main reasons for not continuing with TPM were highlighted by the problems of a French user who had the misfortune to employ a TPM company that operated from a U.K. base and that employed only non-French-speaking engineers.

•   As a result response times, the quality of service, and user-TPM engineer relations were very unsatisfactory.

•   Sixty-two percent of the sample stated that they would be prepared to consider another TPM vendor as a replacement for their current TPM vendor. Seven percent would consider another TPM vendor in addition to their current TPM supplier.

•   The interviewee's preference for replacement of their current TPM vendor raised two issues:

-   The preference suggested that users tended to prefer single-source maintenance.

INPUT

- The users' readiness to replace their current TPM suppliers suggested that users could be dissatisfied with their current service. That was inconsistent with the finding that 92% of the sample described their TPM service as good or adequate.

- It seemed possible that users envisaged continuous evaluation and reassessment of their TPM requirements and would readily change suppliers if they considered it necessary to do so.

- One result of such user attitudes could be the development of a highly competitive TPM marketplace.

- Thirty-one percent of users stated that they would not consider the use of another TPM vendor. Those were mainly users who described their TPM services as "good."

- The responses were intended to give an indication of the factors that would motivate the interviewees to use TPM.

- Cost was the most significant factor and was mentioned by 43% of TPM users.

- Twenty-nine percent of users were forced to use TPM because the manufacturers did not provide maintenance services.

- Twenty-eight percent of users would use TPM if the TPM service were better than that provided by the manufacturers.

- The above results were similar to the motivating factors expressed by potential TPM users who also emphasised cost savings and better quality of service.

INPUT

B.   TPM SELLING POINT

- The interviewees indicated that the principal selling point for TPM would be the cost of the service, with 27% of the sample noting this point, as shown in Exhibit IV-10.

- These interviewees would expect the TPM service to be competitively priced and to offer significant cost savings compared with the existing maintenance charges.

- Some interviewees felt that a minimum of 25% cost savings would be required to induce them to use TPM and to compensate for the risk that they felt they would be taking in using a TPM company.

- The second most important selling point noted by 13% of the sample was that interviewees would expect the TPM company to provide a better quality of service than the manufacturers and also to charge less for that service.

- The remaining selling points related to the practicalities of providing improved quality in maintenance service. The major concerns of the interviewees were assured responsiveness, reliability, and spares availability (mentioned by respectively 8%, 5%, and 5% of the sample).

- To ensure that these criteria were met, interviewees felt that the TPM vendors should be well established and in a position to negotiate with manufacturers about spares availability and how their maintenance contracts could complement each other.

- The interviewees also felt that the improved service should include telephone support; 24-hour service local service centres; effective, high quality maintenance; and the installation of equipment.

INPUT

EXHIBIT IV-10

"WHAT WOULD IT TAKE TO SELL YOU ON TPM?"

SELLING POINT	PERCENT OF MENTIONS
Better Cost Than Manufacturer	27%
Better Service Than Manufacturer	13
Assured Responsiveness	8
Assured Reliability	5
Spares Availability	5
Relationships (negotiations) With Management	3
Established or Experienced Firm	3

Other:
  Telephone Support
  24-Hour Service
  Quality
  Location
  Effectiveness
  Installation
	36

TOTAL	100%

41 Respondents

INPUT
FEBP

C. WILLINGNESS TO EXPERIMENT USING TPM

- Interviewees expressed an understandable wariness about using TPM for part of their system, as shown in Exhibit IV-11.

- Forty-eight percent of the responses were negative; of the interviewees that qualified their responses the main concerns were:

    - Preference for single-source maintenance.

    - The fact that a TPM contract would invalidate the existing contract with the manufacturer for the mainframe computer.

    - Difficulties in separating the components of the system and having separate maintenance contracts.

    - The unsuitability of the installation for TPM due to a low volume of terminals or the use of nonstandard terminals.

- However, 40% of the sample was prepared to try an experiment using TPM for part of their systems and another 12% would be prepared to do so if certain criteria were met.

- Those criteria included the cost, quality, and reliability of the service.

- Thus it appeared that a potential TPM supplier that satisfied those criteria could capture up to 52% of the market for maintenance.

INPUT

EXHIBIT IV-11

"WOULD YOU BE WILLING TO TRY AN EXPERIMENT USING TPM FOR PART OF YOUR SYSTEM?"

No	48%
Yes	40%
Maybe	12%

42 Respondents

INPUT
FEBP

D.   EQUIPMENT FOR TPM

- The products that interviewees considered most suitable for TPM were terminals and printers; they were mentioned by 27% and 19% of the sample respectively, as shown in Exhibit IV-12.

- Interviewees also considered disks and minis to be fairly suitable for TPM, with 18% of the sample noting those products.

- Twelve percent of the sample were prepared to consider TPM for the mainframe or CPU.

- Microcomputer, VDUs, and telecommunications products were in the range of 6-9% of the sample.

- The interviewees' preference for using TPM for terminals and printers could possibly be explained by their comments that:

    - The cost of maintenance charged by manufacturers for terminals was considered to be high when the purchase price and reliability of terminals was taken into account.

    - For most of the interviewees, terminals were not critical and the perceived risks involved in using TPM were fairly low.

- Interviewees were prepared to use TPM for noncritical terminals and terminals at remote sites. If the TPM service was effective in a controlled situation the interviewees would possibly consider using TPM for other, more critical equipment (such as a mainframe - assuming that the TPM company was capable of servicing a mainframe).

INPUT

EXHIBIT IV-12

"FOR WHICH EQUIPMENT WOULD YOU CONSIDER USING TPM?"

Terminals 27%

Printers 19%

Other Disks, Minis 18%

Mainframe or CPU 12%

Micros 9%

VDU 9%

Telecommunications /Communications 6%

22 Respondents

INPUT
FEBP

- One interviewee pointed out that he would only use TPM for the mainframe since he expected that the TPM supplier would have to consult with the in-house DP personnel and the in-house DP personnel were only located in the building where the mainframe was situated.

E.   MULTIPLE LOCATIONS

- Twenty-nine percent of the sample had only one location and of the remaining 71%, 44% were prepared to use TPM at more than one location and 12% felt that they might do so, as shown in Exhibit IV-13.

- Very few users (15% of the sample) would not use TPM at more than one site, and of those that qualified their response, the reasons were:

    - High reliability of remote terminals and consequently low call-out rate would not justify the cost of TPM.

    - In-house capability for maintenance of microcomputers.

    - Unsuitability of TPM for remote sites that had wide variations in maintenance requirements. The current maintenance arrangement for these sites was ad hoc support.

F.   IDEAL TPM COMPANY ATTRIBUTES

- A well-trained and competent force of engineers was considered by most interviewees to be the most important attribute of a TPM company. It received a high rating of 1.4 on a scale of 1 to 6, where 1 signified the most important attribute and 6 signified the least important, as shown in Exhibit IV-14.

INPUT

EXHIBIT IV-13

"WOULD YOU EVENTUALLY CONSIDER TPM AT
MORE THAN ONE LOCATION, ASSUMING YOU
HAVE MORE THAN ONE SITE?"

Yes 44%

Not Applicable. 29%

No 15%

Maybe. 12%

41 Respondents

INPUT
FEBP

EXHIBIT IV-14

"PLEASE RANK ATTRIBUTES (OF A TPM COMPANY) IN TERMS OF IMPORTANCE TO YOU"

RANK	AVERAGE	ATTRIBUTE
1	1.4	Has Well-Trained Engineers
2	2.0	Geographically Near Your Site
3	2.2	References For Successful Operation
4	2.3	Has Close Relationship to Manufacturer
5 (tie)	3.0	Large, Well-Known Firm
5 (tie)	3.0	Provides Service With a Personal Touch

Rating: 1 = Most Important, 6 = Least Important   50 Respondents

INPUT

- The geographical location of the engineer and/or service centre was considered to be the second most important attribute, with a rating of 2.0. Interviewees stressed this attribute, noting how it could affect response times.

- In general, interviewees require high levels of response, e.g., two hours minimum. It was noted that the existence of a nationwide network and having engineers on radio call could facilitate the required response times.

- Interviewees also gave a high rating of 2.3 to the existence of a close relationship between the TPM supplier and the equipment supplier. The ability of the TPM vendor to have a skilled engineer on-site within the required response time would be negated if the TPM vendor were unable to provide spares for the equipment.

- Interviewees were particularly concerned about the availability of spares and the ability of the TPM companies to make agreements with manufacturers that would ensure cooperation between them.

- References for successful TPM operations received a rating of 2.2 from interviewees and emphasised how essential that attribute was to the credibility of a TPM supplier. One interviewee wanted to be able to go to reference sites personally in order to check them out.

- Interviewees gave large, well-known firms a rating of 3 and expressed concern about the reputation and financial stability of the TPM companies.

- Services with a personal touch also received a rating of 3. The TPM engineer should build up a good relationship with users in order to gain and maintain their confidence in the TPM company. Some interviewees stressed the importance of engineers being approachable, having good interpersonal skills, and giving guidance on in-house minor repairs. It was also noted that service

INPUT

with a personal touch could not compensate for lack of professionalism and competence.

G.   IDEAL TPM SERVICE ATTRIBUTES

- The principal service attributes according to the survey were guaranteed spare parts availability, economy, and good diagnostics and test equipment, which were rated 1.6, 1.8, and 1.9 respectively, as shown in Exhibit IV-15.

- In addition to receiving a high-quality, cost-effective service from TPM suppliers, interviewees want assurance that TPM suppliers have access to an adequate supply of spare parts.

- Field service revenues have become increasingly important to manufacturers and some manufacturers have reacted to the competition from TPM companies by limiting access to spare parts and advising users against TPM. This appeared to be a serious obstacle to interviewees' willingness to use TPM.

- Flexibility was also considered to be an important attribute of TPM service. Interviewees were interested in having both flexible service options (e.g., on-site, call-out, walk-in, mail-in, and collection) and flexible methods of payment (e.g., hardware maintenance contracts, ad hoc time and materials, etc.).

- Interviewees considered the ability of TPM companies to maintain mixed systems to be a fairly important service attribute (rating 3.2).

- The interviewees had two definitions of mixed systems:

    - Systems composed of products from various manufacturers.

INPUT

EXHIBIT IV-15

"PLEASE RANK ATTRIBUTES (OF TPM SERVICES) IN TERMS OF IMPORTANCE TO YOU"

RANK	AVERAGE	ATTRIBUTES
1	1.6	Guaranteed Spare Parts Availability
2	1.8	Economical
3	1.9	Good Diagnostics and Test Equipment
4	2.6	Flexible
5	3.2	Ability to Maintain Mixed Systems
6	3.6	Software Support Capability

Rating: 1 = Most Important, 6 = Least Important   50 Respondents

INPUT
FEBP

- Systems incorporating telecommunications facilities, in addition to hardware and software.

- Most interviewees used the definition of mixed systems as products from different manufacturers.

- It appeared that the ability of TPM companies to maintain mixed systems as described above was a major determinant of the market share potential for TPM companies, especially in view of the trend for diverse office products to be linked together in local-area networks.

- Software support capability was rated 3.6 by interviewees, and could be very problematic for TPM companies, not only from the viewpoint of the cost involved in providing software maintenance but also from the viewpoint of monitoring software charges. Where TPM companies, in-house programmers, and software houses are involved in software maintenance and upgrades etc., very close cooperation will be required between them.

H.   OTHER ATTRIBUTES OF TPM COMPANIES AND SERVICES

- Fifty-two percent of those who mentioned "other" attributes referred to the importance of response times. Guaranteed response times were considered important, with a maximum of one to two hours response for UPUs and serious problems. There was a certain flexibility for VDU response times but users had high overall expectations. They required faster response times if their sites were located close to the TPM service centres, irrespective of the repair priority, as shown in Exhibit IV-16.

- One interviewee commented that response times could be improved if engineers were more easily obtainable by being on radio call.

INPUT

EXHIBIT IV-16

"OTHER ATTRIBUTES (OF IMPORTANCE FOR TPM COMPANIES OR SERVICE)"

```
Response Time. . . . . . . . . . . . . 52%

Other Contracts, Repair Time,. . . . . 34%
Research & Development,
Engineering Time

Full Coverage . . . . . . . . . . . . . 7%

Cost . . . . . . . . . . . . . . . . . 7%
```

26 Respondents

INPUT
FEBP

- Full coverage and cost were each noted as concerns by 7% of the interviewees who mentioned "other" attributes.

- By cost, interviewees meant cost savings and cheaper rates than those quoted by manufacturers (without reductions in service quality).

- The remaining 34% of interviewees that mentioned "other" attributes mentioned a wide range:

    - The ability of the TPM company to install and decommission equipment.

    - The ability of the TPM company to satisfy the normal requirements of the manufacturers' maintenance regarding engineering updates.

    - The ability of the TPM company to keep up to date with technology changes through ongoing research and development.

    - TPM service policies that ensured that engineers would service specific sites and maintain close relationships with users.

    - Competence in the language of the country in which the work is done.

    - Management stability and commitment to continue to maintain certain manufacturers' products.

    - Flexible methods of charging for maintenance and possibly offers of a combination of fixed-price contracts and ad hoc charges.

    - Good repair times and easy availability of spare parts.

- Exhibit IV-17 is a selection of users' comments regarding TPM.

INPUT

EXHIBIT IV-17

COMMENTS ON HOW TPM SERVICES COULD BE IMPROVED OR MADE MORE ATTRACTIVE TO USERS

- "TPM must offer significant cost reduction to justify the perceived risk of nonproven services".

- "Location is not so important".

- "How is relationship between user and supplier affected if user employs TPM?"

- "Like to see cost reduction (in service)".

- "(TPM) must be proven in operation".

- "One drawback of TPM is lack of response time".

- "Flexibility and willingness to provide customized service".

- "(Need) fast response (2 hours) from TPM service".

- "Main problem is protectionism of manufacturers".

- "TPM has to offer something extra: better response, commitment to follow through, prove worth, undertake maintenance of odd parts of the installation".

- "Difficult for users to influence TPM market. Depends on policy of manufacturer".

19 Respondents

INPUT
FEBP

V MANUFACTURERS: EXTENT OF INVOLVEMENT IN TPM AND DEGREE OF SUPPORT TO OTHER TPM FIRMS

- Twenty-nine manufacturers were asked about their own participation in TPM, in terms of providing it and also with respect to supporting an independent TPM with enough resources to service the manufacturer's equipment. Several manufacturers also have dealer or distributors representing them, particularly in the smaller product categories.

- The companies interviewed were representative of the market in terms of area and products, as shown in Exhibit V-1.

A. BELL & HOWELL

- Bell & Howell has publicly announced entry into TPM, but their business plans don't offer too much. They want to approach the microfilm/microcomputer TPM market and are thus currently under negotiation with other companies to do TPM.

EXHIBIT V-1

- 72 -

RESPONDENT MANUFACTURERS AND MERCHANTS

NUMBER	PERCENT	REPRESENTING
Area		
24	83%	United Kingdom
8	28	Europe
2	7	Belgium
1	3	Sweden
1	3	Holland
Products		
8	28%	Large Systems
17	59	Small Systems
18	62	Peripherals
23	79	Terminals
8	28	Datacommunications
19	66	Microcomputers
13	45	Word Processors
4	14	Copiers
2	7	PBAX
1	3	Voice

INPUT
FEBP

B.   CDC

- CDC expects to do $760,000 in 1984 TPM, originating mostly from DEC equipment. Total turnover is $8.7 million. CDC entered the TPM business for revenue growth and for total support of CDC customers. They expect TPM to grow 30% per year. In 1983 CDC bought Systime, which was established previously in TPM. CDC would reluctantly provide sources to an independent TPM vendor interested in servicing CDC equipment.

C.   CENTRONICS

- Centronics is in TPM but sometimes services OEM equipment - e.g., Milhouse systems. The reason for not entering TPM is because "our main business is manufacturing and supplying printers. If we serviced our own products that are entering this market it would mean a dilution in our effectiveness to service our current user base." Their revenues for service are $913,000. They would cooperate in supplying resources to a TPM vendor.

D.   COMMODORE

- Commodore does not do TPM and probably won't consider it because of an already heavy workload. They might be a candidate for taking over main-tenance. Commodore would probably be obliging to TPM firms wanting their resources.

INPUT

E.   COMPUTERVISION

● Computervision makes about $290,000 doing TPM on OEM equipment that is integrated into their own, e.g., Versetec printers, Benson Plotters, etc. They do this type of TPM because there is a lack of support from OEMs. Computervision would resist anyone attacking this base.

F.   DATA GENERAL

● Data General is strongly opposed to doing TPM and has no intentions of getting into it. The grapevine says that DG bought a small company to experiment in TPM and has failed. DG's attitude towards supporting TPM is positive only if it does not affect their revenue base.

G.   DIGITAL EQUIPMENT CORPORATION

● There are conflicting reports as to exactly what DEC's posture is regarding TPM. At least two outside sources believe DEC experimented with TPM and failed. A highly regarded source in Digital indicated that DEC was definitely not in TPM and will not enter TPM because the engineering staff has enough to do already. The source also indicates that DEC would not support TPMs by supplying parts training. INPUT believes that DEC is in the TPM business to the extent of servicing foreign equipment that is compatible with DEC equipment, and that this activity will grow rapidly. Current TPM maintainers of DEC gear support this. Also, because of the relatively large number of DEC TPM firms in existence, the facility for getting resources (parts training, etc.) must be adequate.

INPUT

H.   ERICSSON

- Ericsson is not in TPM but services some OEM products integrated with theirs. They would reluctantly support a TPM vendor.

I.   FLOATING POINT

- Floating Point doesn't participate in TPM; however, it services CDC disks integrated in their systems. Their reaction to supporting another TPM vendor is described as "reticent - Floating Point's image with customers will be eroded if anything goes wrong because of subcontract activities. Initially we would feel threatened (by TPM) and would have to evaluate our customer base and market demands. Our objective is to make sure our customer is optimally maintained - we are not primarily a service company."

J.   GENERAL AUTOMATION

- General Automation is not in TPM but services integrated OEM gear, e.g., VDUs and printers. They are "not adverse to supporting an independent TPM vendor." Competition is healthy according to GA, but GA is concerned that TPM firms might tarnish GA's credibility and good image in the marketplace.

INPUT

K. HEWLETT-PACKARD

- Hewlett-Packard is not in TPM, aside from OEM-integrated equipment, e.g., the Diablo printer. Entering TPM is "totally out of the question." They would provide any help needed from another TPM vendor. "We are concerned that the image of the equipment and company name can be at risk if agents do bad repairs."

L. HITACHI

- Hitachi is not into TPM but may consider it in the future so that "we can offer a total computer service rather than only a part." The question of whether or not Hitachi will provide TPM firms with resources is "academic since all our products are currently maintained by us free of charge for two years (warranty) and so far we have not developed a policy decision for maintenance after this time."

M. HONEYWELL

- Honeywell is not in TPM but services OEM-integrated equipment. They were considering being Apple's U.K. service agent but claimed Apple wasn't prepared to give them exclusiveness - resulting in no deal. (GCS now has Apple). In the U.S. Honeywell is aggressively pursuing TPM. Honeywell U.K. will observe the results and enter TPM only if volumes, revenues, and profits justify it. They would reluctantly provide support to TPM, and currently do so. They feel legally obliged to provide parts but emergency parts are difficult to obtain. They won't supply source code and are reticent to provide engineer training, but it's available, as are backup support and repairs.

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INPUT

N. IBM

- IBM is vehemently opposed to doing TPM because, with their excellent reputation, servicing a competitor's equipment would give the same competitor an advantage in selling its hardware against IBM. IBM will support TPM vendors because of their own company policy that is structured from the 1956 consent decree. Lately, however, IBM is manipulating prices in an attempt to dissuade users from TPM (by lowering contract rates and increasing ad hoc rates).

- INPUT contacted IBM to hear their response to the rumor that they were considering TPM companies to service PCs. They indicated that this was an idea about three years ago but not now. Their argument is that if they did select a network of TPMs, these firms could later attack the larger non-PC IBM base. The opposing theory is that dealer service simply isn't practical in many cases. An extreme example is British Airways, which has 2,000 IBM PCs and is supposed to use its local dealer (which did not sell them to BOAC) for service. Whether or not IBM will or will not eventually choose TPM firms to provide service is not certain, but INPUT believes IBM won't, because of the exposure.

O. ICL

- ICL doesn't do TPM except on OEM gear in their product line. ICL has a broad range of equipment - mainframes to PCs - and as such includes a variety of OEMs, e.g., CDC disks. ICL is considering going into TPM and is motivated by a need for a single-network maintenance organisation. ICL will support independent TPM firms if they sign a support agreement that is known to be constraining in that the TPM vendor has to order the kit of spares recommended by ICL and the order must be placed nine months in advance of delivery. "The service industry is based on very heavy capital investment in spares and a TPM vendor can't jump the queue."

INPUT

P.   ITT

- ITT is aggressively pursuing TPM on DEC, GA, CDC, Apple, and IBM equipment in Italy, Spain, the Netherlands, Belgium, Germany, and Scandinavia. They currently have about 15 customers and a large portion of these are in-house service, i.e., ITT-owned equipment. They believe they save 19.4 million dollars a year by doing their own service. ITT would cooperate in providing TPM support to others.

Q.   KIENZLE

- Kienzle is not in TPM but is looking into it as a revenue adder and as a better utilisation of engineers. They are also looking at computer systems as well as medical and security systems for TPM. They indicate that they would not supply parts to a TPM vendor.

R.   3M

- 3M currently is pursuing TPM as each country manager makes up a TPM plan. TPM equals two percent of service business in Germany and 20% in France. 3M services about 12 other manufacturers' terminals, electro-mechanical devices, and money transfer machines. The motivation for entering TPM was: "as a profitable business area - increases productivity of a large service force." 3M won't service equipment in its own market, e.g., copiers. "Quite happy to work with TPM companies."

INPUT

S. MANNESMAN TALLY

- Tally got into TPM by accident when they became distributors for C ITOH and got the service responsibility as well. Therefore they are looking further into TPM and see a potential growth of 20% per year. They will supply parts and resources to other TPM vendors but don't want to jeopardise their own business or product image.

T. NCR

- NCR services OEM equipment attached to NCR gear. On a case-by-case basis they pursue TPM on the basis of profitability and for products related to or associated with NCR's. NCR would provide all necessary components to a TPM company.

U. OSBORNE

- Osborne doesn't do TPM but does service OEMs such as NEC; BMC; and Star monitors, printers, and modems. Osborne will be turning their service over to a TPM. GCS thinks it will be them.

V. PHILIPS

- There are many diverse divisions in Philips. The MEL (Defence Systems and Linear Accelerators) division responded that they only do TPM for the test equipment used on their own products. Philips will support independent service of their equipment by supplying parts, documentation, and training.

INPUT

W.   PLESSEY

- Plessey isn't into TPM and has no plans to do so. However, Plessey Communications Systems is actively involved in servicing telephone, security, and fire protection equipment. Plessey will only support a TPM company that doesn't affect them financially - or when Plessey is legally obliged.

X.   PRIME

- Prime is very slightly interested in TPM and only provides it to Prime users who want service for OEM equipment that is attached to Prime gear. There are no plans to change this policy. Prime will not provide support for TPM.

Y.   SHARP

- Sharp does not currently and will not in the future consider TPM. In fact, the only direct service done by Sharp is on electronic cash registers. Sharp dealers and distributors handle their own service.

- Sharp appears to have the attitude that service is a necessity for selling hardware. "We see ourselves as a manufacturing/distributing company offering technical support through dealers. There is no history of providing service. Sharp is looking toward operating a sales and service dealer network.

INPUT

Z.   TANDY

- Tandy does not do TPM now but may consider it in the future because of interfacing requirements with other products. Tandy supports TPM providers and dealers that provide service on their products. "We have no objection to healthy competition. We ally ourselves with our dealers but do not have authorised Tandy repair service. We have good relations with companies that buy parts, training, etc."

AA.   TEXAS INSTRUMENTS

- Texas Instruments provides TPM for OEM equipment listed in the TI price catalogue but it is currently reviewing other TPM opportunities. "We believe we may have to (consider TPM) as more peripherals that are very price competitive and compatible with TI equipment come onto the market." TI will probably enter the TPM market in the future. TI is not opposed to providing resources to other TPM firms. Their only requirement is that TPM be reputable and maintain the same quality standards of service that TI has. TI currently subcontracts out service for their OEM daisywheel printer but retains administrative control.

BB.   VERRAN MICRO MAINTENANCE

- Verran has revolutionised micro service by diagnosing and repairing on a production line concept. Verran does not advertise and is almost clandestine about their operation because they don't want competitors sharing their ideas or business. They have most of Sinclair's service business. All Sinclair dealers ship the bad units to Verran for repair. Verran is expanding into other Sinclair products. Verran repairs up to 5,000 micros per week, which, with a blanket repair charge of $20, equals $5.0 million per year.

INPUT

CC.   WORDPLEX

- Wordplex does not do TPM and has no plans to. They have enough to do in servicing 6,000 machines with 140 engineers. Their policy towards supporting TPM vendors is total resistance.

INPUT

APPENDIX A

USER QUESTIONNAIRE

Currently Using TPM

I. A. If currently using TPM, for how long? _____ . Who? _____

    B. Is it: good, adequate or poor service?

    C. Do you intend to continue using TPM? _____

    D. Would you consider another TPM vendor? _____

    E. Principal motivations for using TPM _____

    F. Go to II. E.

Consideration of TPM

II. A. What would it take to sell you on TPM? _____

        _____

    B. Would you be willing to try an experiment using TPM for part of your equipment? _____

    C. Which equipment? _____

    D. Multiple location? _____

    E. Assuming that a TPM company were available to provide service on your equipment, please indicate attributes you would like to see in such a company. Choose eight (8).

        1. Large, well-known firm
        2. Close in proximity   _____
        3. References for successful operation   _____
        4. Guaranteed spare parts availability   _____
        5. Personal touch   _____
        6. Economical   _____
        7. Ability to maintain hybrid systems   _____
        8. Well-trained field engineers   _____
        9. Good diagnostics and test equipment   _____
       10. Close relationship to manufacturer   _____
       11. Fast turnover on repairs   _____
       12. Software support   _____
       13. Guaranteed uptime   _____
       14. Other   _____

INPUT
FEBP

VENDOR QUESTIONNAIRE

Public ☐
Private ☐

Name of Company _____

Parent/Subsidiary/Division of _____

Date company started TPM _____

Date of interview _____ Person interviewed _____

1. Financial

	1982	1983	1984	1985	1986

A. Turnover _____

B. Profit & Loss _____

C. Assets _____

D. Composition of Revenue _____

2. Operations

A. Territory _____

B. Service locations _____

C. Number of Engineers _____

D. Number of Tech Support _____

3. Equipment Maintained

A. Current _____

B. Future _____

C. Relationship to Manufacturer _____

4. Organization

A. Management Profile _____

B. Goals _____

C. Strategies _____

D. Strengths _____

E. Weaknesses _____

F. Structure _____

5. Account Profiles _____

6. Joint Venture/Acquisition Attitude _____

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INPUT
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MANUFACTURER QUESTIONNAIRE

1. Do you service any equipment other than your own? Yes ____ No ____
   (If not, proceed to Question 8)

2. Current TPM turnover = £ _____

3. Current TPM turnover % Total Service Turnover = £ _____

4. Products maintained Now (N) or Future (F)

MANUFACTURING	MODEL NUMBER
_____	_____
_____	_____
_____	_____

5. Where do you perform TPM? _____

6. Number of customers (TPM) _____

7. Type of TPM customers _____

8. Motivation for Entering (or not entering) TPM _____

   _____

   _____

9. Future:
   Plans _____

   Growth Projections _____

10. Your company's policies for providing resources to independent service firms wanting to maintain your equipment:

    Parts _____

    Revisions/Updates _____

    Training _____

    Backup Engineering Support _____

    Repairs _____

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